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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,642

08/20/2008

Guy Gentet

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23280 7590 12/31/2008  
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EXAMINER

BOYD, ERIN M

ART UNIT

PAPER NUMBER

3663

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,642	<b>Applicant(s)</b> GENTET ET AL.	
	<b>Examiner</b> Erin M. Boyd	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "11" and "33" have both been used to designate guide tubes (see page 11, line 24). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 18 is objected to because of the following informalities: "reinforcing" is misspelled in line 3. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 28 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites that the reinforcing device does not have an arrangement for holding the nuclear fuel rods; however, a fuel rod could be laid on top of the reinforcing device and be "held" from falling or a fuel rod could be set within the reinforcing device and be kept or "held" from interacting with other parts of the fuel assembly (e.g. peripheral fuel rods, channel, etc.). It would not be clear to one of ordinary skill in the art from reading the disclosure how to construct the reinforcing device to prevent holding (to some extent) nuclear fuel rods.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 15-19 and 21-28 are rejected under 35 U.S.C. 102(b) as being anticipate by U.S. Patent No. 5,625,657 (herein after "Gallacher").

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7. Regarding Claim 15, Gallacher teaches a nuclear fuel assembly 10 comprising a group of nuclear fuel rods 3 and a support skeleton, the assembly comprising two nozzles 12, 26; guide tubes 14 interconnecting the nozzles 12, 26; and spacer grids 18 secured to the guide tubes 14 (figure 2) and serving to hold the rods 3; the nuclear fuel rods 3 extending along a longitudinal direction and being disposed in a substantially regular array; the assembly 10 including at least one support skeleton reinforcing device 50 disposed between two successive spacer grids 18 and secured to the guide tubes 18 (note: the guide tubes are secured to the fuel rods and the reinforcing device is secured to the fuel rods; thus the guide tubes are indirectly secured to the reinforcing device), and the reinforcing device 50 being disposed inside the group of rods 3 and presenting a transverse extent that is less than the transverse extent of the array of rods 3 (figures 1 and 5B).

8. Regarding Claim 16, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not extend into peripheral layer of rods 3 (figure 5B).

9. Regarding Claim 17, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not extend between the peripheral layer of rods 3 and an adjacent layer of rods 3 (figure 5B).

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10. Regarding Claim 18, Gallacher teaches an assembly 10 wherein the reinforcing device 50 extends longitudinally substantially as far as a spacer grid 18 immediately above the reinforcing device 50 (figure 5B).

11. Regarding Claim 19, Gallacher teaches an assembly 10 wherein the reinforcing device 50 defines at least one transverse flow passage above the spacer grid 18 immediately beneath the reinforcing device 50, the passage serving to pass a cooling fluid for flowing through the assembly 10 (figure 5B).

12. Regarding Claim 21, Gallacher teaches an assembly 10 wherein the bottom end of the reinforcing device 50 is disposed at a distance from the spacer grid 18 immediately beneath the reinforcing device 50 so as to define the transverse flow passage for the cooling fluid (figure 5B).

13. Regarding Claim 22, Gallacher teaches an assembly 10, wherein the reinforcing device is secured to at least two guide tubes (note that indirectly secured meets the claim limitation).

14. Regarding Claim 23, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is a substantially plane plate (figure 4A).

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15. Regarding Claim 24, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is substantially parallel to one of faces of the group of nuclear fuel rods 3 (figure 5B).

16. Regarding Claim 25, Gallacher teaches an assembly 10 wherein the reinforcing device 50 is an angle member forming at least one L-shape (figure 4A).

17. Regarding Claim 26, Gallacher teaches an assembly 10 wherein the angle member is disposed in a corner of the group of nuclear fuel rods 3 (figure 5B).

18. Regarding Claim 27, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not have a mixer arrangement for mixing the cooling fluid that is to flow through the assembly 10 (figure 4A).

19. Regarding Claim 28, Gallacher teaches an assembly 10 wherein the reinforcing device 50 does not have an arrangement for holding the nuclear fuel rods 3 (column 4, lines 43-47). (Note that the claim does not recite that the reinforcing device lacks an arrangement for holding any fuel rods in the assembly).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,625,657 ("Gallacher").

22. Regarding Claim 20, Gallacher teaches an assembly 10 wherein the reinforcing device 50 extends longitudinally (figure 5B) and wherein a passage is formed by an opening formed through a bottom end of the reinforcing device 50 (figure 3), but fails to specifically teach that said device extends longitudinally substantially as far as the spacer grid immediately below the reinforcing device.

However, one of ordinary skill in the art is expected to routinely experiment with the parameters, especially when the specifics are not disclosed, so as to ascertain the optimum or workable ranges for a particular use. For instance, the distance which the reinforcing device 50, of Gallacher, extends depends on the extent of damage to the spacer grid or fuel rod, the amount of vibration or turbulence in the core, etc.

Accordingly, it would have been obvious through routine experimentation and optimization, for one of ordinary skill in the art to construct the reinforcing device extend longitudinally substantially as far as the spacer grid immediately below the reinforcing device.



***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,263,072 ("Canat et al.").

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. Boyd whose telephone number is (571) 270-5378. The examiner can normally be reached on Monday - Friday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rick Palabrica/  
Primary Examiner, Art Unit 3663

/E. M. B./  
Examiner, Art Unit 3663

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